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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,977

07/17/2006

Hideaki Okamoto

00684.102866.

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7590

04/13/2009

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EXAMINER

HICKS, CHARLES V

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

04/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,977	Applicant(s) OKAMOTO, HIDEAKI	
	Examiner CHARLES HICKS	Art Unit 4175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/12/2005;01/12/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Gettemy et al. (US 7,324,093).

In reference to claim 1, Gettemy teaches an apparatus for effecting at least one of display and input (Gettemy Fig. 4, display panel 500, touch sensor 501),

comprising: a flexible sheet-like member for effecting at least one of display and input (Gettemy Fig. 4, display panel 500, touch sensor 501),

and a rigidity adjusting means for changing at least partially a rigidity of said flexible sheet-like member (Gettemy Fig. 4, support shelf 502; column 10 lines 30-32),

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Claim 2 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy teaches wherein said sheet-like member comprises an input portion and a display portion which substantially overlap each other to provide a unit when viewed from a direction of a user's line of sight (Gettemy Fig. 3C, 4).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) in view of MacGregor et al. (US 2006/0157659).

Claim 3 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy teaches a rigidity adjusting member attached to the sheet-like member (Gettemy Fig. 4, support shelf 502).

Gettemy however fails to teach rigidity adjusting means comprises a control portion and rigidity adjusting member being formed of a variable-rigidity material.

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MacGregor teaches rigidity adjusting means comprises a control portion (MacGregor page 6 paragraph 56),

and rigidity adjusting member being formed of a variable-rigidity material (MacGregor page 2 paragraph 25; Shape Memory Alloy material).

As Shape Memory Alloy is well known as a stiffening material when applied with controlled heat, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy with the variable-rigidity material of MacGregor.

The motivation being a flexible display with the advantage of controlled rigidity.

Claim 7 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy fails to teach wherein said apparatus further comprising means for controlling timing of ensuring and/or losing rigidity necessary for the apparatus.

MacGregor teaches wherein said apparatus further comprising means for controlling timing of ensuring and/or losing rigidity necessary for the apparatus (MacGregor page 3 paragraph 28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy with the timing control of MacGregor.

The motivation being a flexible display with sensing mechanism for controlled timing of the rigidity of the shape memory alloy.

Claim 11 is rejected as being dependent on rejected claim 3 as discussed above and further Gettemy teaches wherein said apparatus is at least an apparatus for effecting display, and said rigidity adjusting member also functions as a base portion of drive means for driving said apparatus (Gettemy Fig. 4; Display Panel 55 and Flexible Touch Surface 501 supported by base portion 502).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) modified by MacGregor et al. (US 2006/0157659) and further in view of Nason et al. (US 7,226,278).

Claim 9 is rejected as being dependent on rejected claim 3 as discussed above and further, Gettemy modified by MacGregor fails to teach wherein said apparatus further comprises control portion operation means for permitting a user to operate a control portion, and rigidity of said apparatus is controllable by operating the control portion operation means by the user.

Nason teaches wherein said apparatus further comprises control portion operation means for permitting a user to operate a control portion, and rigidity of

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said apparatus is controllable by operating the control portion operation means by the user (Nason column 8 lines 12-13; control or programming of the shape memory alloy is controlled by the user).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the rigidity adjusting display of Gettemy modified by MacGregor with the user controls of Nason.

The motivation being a flexible display with rigidity controllable by a user.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) in view of MacGregor et al. (US 2006/0157659) and Wehrenberg et al. (US 2006/0017692).

Claim 4 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy teaches rigidity necessary for said sheet-like member (Gettemy Fig. 4, support shelf 502; column 10 lines 30-32).

Gettemy however fails to teach rigidity adjusting member is not controlled to ensure rigidity.

MacGregor teaches rigidity adjusting member is not controlled to ensure rigidity (MacGregor page 6 paragraph 56; MacGregor teaches that the shape memory alloy may be under control, or not, of a powered shape memory alloy controller).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy with the control, or lack of control, of MacGregor.

The motivation being a flexible display that conserves power when the shape memory alloy is not being controlled.

Gettemy modified by MacGregor however fails to teach wherein said apparatus further comprises first detection means for detecting a state of said sheet-like member, said detection means at least detects that said sheet-like member is not placed on a surface having a certain degree of rigidity.

Wehrenberg teaches wherein said apparatus further comprises first detection means for detecting a state of said sheet-like member, said detection means at least detects that said sheet-like member is not placed on a surface having a certain degree of rigidity (Wehrenberg page 9 paragraph 109; determines whether a portable device is picked up).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the rigidity adjusting member of Gettemy modified by MacGregor, with the detection means of Wehrenberg.

The motivation being the ability to conserve power by recognizing when the flexible display device does not need to supply power to the shape memory alloy.

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Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) in view of MacGregor et al. (US 2006/0157659) and Wehrenberg et al. (US 2006/0017692) and further in view of Graham (US 2004/0201579).

Claim 8 is rejected as being dependent on rejected claim 4 as discussed above and further, Gettemy modified by Wehrenberg fails to teach control of said rigidity adjusting means.

MacGregor teaches control of said rigidity adjusting means (MacGregor page 6 paragraph 56; MacGregor teaches that the shape memory alloy may be under control of a powered shape memory alloy controller).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy modified by Wehrenberg with the control of MacGregor.

The motivation being a flexible display operable in a rigid mode during input by the user.

Gettemy modified by Wehrenberg and MacGregor fails to teach wherein a detection means detects a state of said apparatus during input.

Graham teaches a detection means detects a state of said apparatus during input (Graham page 1 paragraph 9).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy modified by Wehrenberg and MacGregor with the input detection of Graham.

The motivation being a flexible display operable by the user in a rigid mode during input.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) in view of MacGregor et al. (US 2006/0157659) and further in view of Graham (US 2004/0201579).

In reference to claim 5, claim 5 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy however fails to teach rigidity adjusting member is not controlled to ensure rigidity.

MacGregor teaches rigidity adjusting member is not controlled to ensure rigidity (MacGregor page 6 paragraph 56; MacGregor teaches that the shape memory alloy may be under control, or not, of a powered shape memory alloy controller).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy with the control, or lack of control, of MacGregor.

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The motivation being a flexible display that conserves power when the shape memory alloy is not being controlled.

Gettemy modified by MacGregor fails to teach wherein said apparatus further comprises second detection means for detecting start of input, and said detection means at least detects start of input.

Graham teaches wherein said apparatus further comprises second detection means for detecting start of input, and said detection means at least detects start of input (Graham page 1 paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy modified by MacGregor with the detection of input of Graham.

The motivation being a flexible display that conserves power until user input is detected.

In reference to claim 6, claim 6 is rejected as being dependent on rejected claim 1 as discussed above and further, Gettemy however fails to teach rigidity adjusting member is controlled to return rigidity adjusting member to a flexible state.

MacGregor teaches rigidity adjusting member is controlled to return rigidity adjusting member to a flexible state.

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(MacGregor page 6 paragraph 56; MacGregor teaches that the shape memory alloy may be under control of a powered shape memory alloy controller).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy with the control of MacGregor.

The motivation being a flexible display that goes into a power conservation mode as controlled by the controller.

Gettemy modified by MacGregor fails to teach wherein said apparatus further comprises second detection means for detecting stop of input, and said detection means at least detects stop of input.

Graham teaches wherein said apparatus further comprises second detection means for detecting stop of input, and said detection means at least detects stop of input (Graham page 2 paragraph 23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rigidity adjusting member of Gettemy modified by MacGregor with the detection of no data input for a predetermined period of time of Graham.

The motivation being a flexible display that conserves power by going into a sleep mode when no inputs are detected.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gettemy et al. (US 7,324,093) in view of Sawyer (US 6,762,929).

Claim 10 is rejected as being dependent on rejected claim 1 as discussed above and further Gettemy fails to teach wherein said rigidity adjusting means comprises a movable mechanism which can be placed in such a state that it does not impair flexibility of said sheet-like member and is movable in an area capable of at least partially ensure rigidity of said sheet-like member.

Sawyer teaches wherein said rigidity adjusting means comprises a movable mechanism which can be placed in such a state that it does not impair flexibility of said sheet-like member and is movable in an area capable of at least partially ensure rigidity of said sheet-like member (Sawyer column 3 lines 30-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the rigidity adjusting member of Gettemy with the movable mechanism of Sawyer.

The motivation being a flexible display that enables the user to adjust the viewing angle.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES HICKS whose telephone number is 571-270-7535. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CH

/Richard Hjerpe/
Supervisory Patent Examiner, Art Unit 2629